

A NEW SPECIES OF *BRYOLYMNIA* HAMPSON FROM SOUTHEASTERN ARIZONA (NOCTUIDAE)

CLIFFORD D. FERRIS¹

5405 Bill Nye Ave., R.R. 3, Laramie, WY 82070, USA, cdferris@uwyo.edu

AND

NOEL MCFARLAND

P. O. Box 277, Hereford, AZ 85615

ABSTRACT. *Bryolymnia anthracitaria*, new species, is described from southeastern Arizona. Adults and male and female genitalia are illustrated, and comparison is made with the other two North American species.

Additional key words: *Bryolymnia anthracitaria*, *Bryolymnia semifascia*, *Bryolymnia viridimedia*, Arizona, Noctuidae, taxonomy, Xyleninae

According to the most recent catalog of the World Noctuidae (Poole, 1989), there are seventeen currently described species of *Bryolymnia*, two of which occur in the United States and the remainder range from Mexico to Argentina. *Bryolymnia semifascia* (Smith, 1900), (Fig. 1), was described from Garfield Co., Colorado with the holotype placed in the National Museum of Natural History [USNM], Smithsonian Institution, Washington, DC. *Bryolymnia viridimedia* (Smith, 1905), (Fig. 2), was described from Cochise Co., Arizona with the holotype placed in the American Museum of Natural History [AMNH], New York, NY.

To date, *B. viridimedia* and the new species have been recorded only from southeastern Arizona with very few records for the former. On the other hand, *B. semifascia* is a relatively common species that ranges from Colorado southward to western Texas, southern New Mexico and southeastern Arizona.

Specimens of the new species have resided undescribed in museum and personal collections for sixty years. The earliest records that we found are four specimens in the Los Angeles County Museum of Natural History collected in July, 1947 by J. A. Comstock and L. M. Martin in Madera Canyon, Santa Rita Mts., Arizona. Additional specimens were collected in southeastern Arizona in 1959–60 by J. G. Franclemont and placed in the collection at Cornell University, Ithaca, NY. McFarland first collected specimens in the Huachuca Mts., in 1986. Since then, additional material was obtained by several other collectors. Genitalic examination of the moth places it in the genus *Bryolymnia* (subfamily Xyleninae, tribe

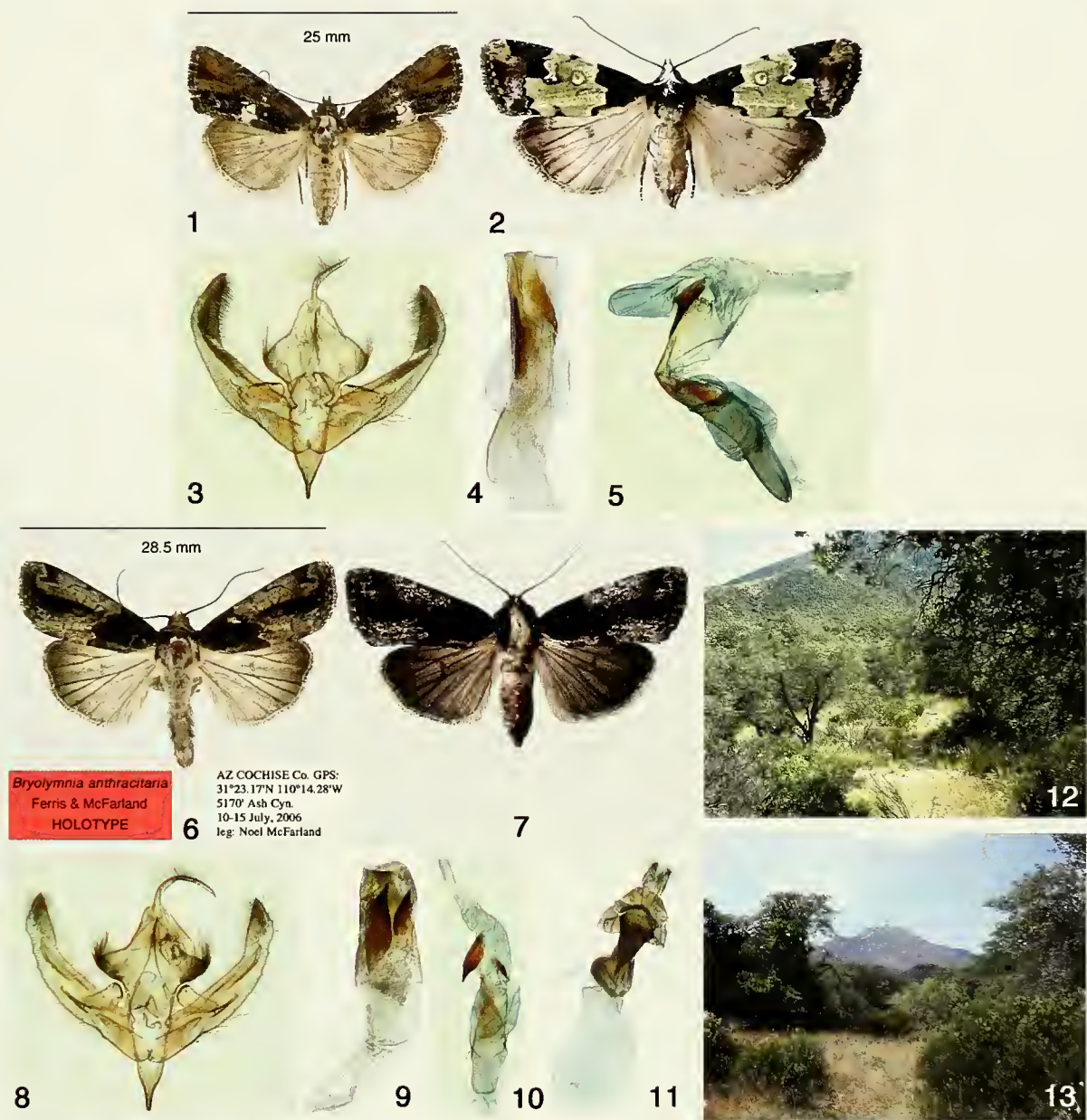
Elaphriini). The genitalia of *B. semifascia* are illustrated for comparison (Figs. 3–5). A male specimen of *B. viridimedia* was not available for dissection.

Bryolymnia anthracitaria Ferris and McFarland, new species (Figs. 6–11)

Diagnosis. *B. anthracitaria* is immediately separated from all other members of the genus by the broad jet black basal patch covering almost half of the dorsal forewing (DFW), and the additional horizontal oblong black patch covering the middle of the outer half of the wing. *B. semifascia* has a broad blackish area across the lower half of the DFW interrupted by a white spot; *B. viridimedia* has a broad greenish DFW median band.

Description. MALE (Figs. 6, 8–10). *Head:* Vestiture rough, scales moderately narrow; frons slightly rounded, gray with central patch of darker scales; no frontal protuberance. Labial palpus robust, covered with dark brown scales flecked with gray scales, upturned and nearly appressed to front; middle segment elongate, more than 3 times length of basal segment; apical segment slightly shorter than basal segment. Well-developed eye with ocellus. Vertex scales slender and a mixture of dark brown and gray. Antenna brown, filiform, ventrally setose; scape mottled dark brown dorsad, tuft of white scales ventrad. Proboscis well developed. *Thorax:* Centrally divided rough collar of pale-tipped dark brownish-black scales; thick tegulae nearly black; central area covered with slender whitish scales and edged with brown scales. Forelegs and midlegs covered with brown scales, white-ringed at tarsal joints; hindlegs with long hairlike paler brown and whitish scales, white-ringed at tarsal joints. Ventral thorax clothed in long hairlike whitish scales. *Abdomen:* Covered with long hairlike pale brown and whitish scales, darker dorsad; dorsal tuft of pale-tipped dark brown scales projects from segment I. *Forewing:* Length (base to apex, n = 20): 12.0–14.5 mm, ave. 13.5 mm. Basal area black extending to irregular thin pale edge of diagonal antemedial band; antemedial band narrow and brown with scattered lighter and darker scales. Median line very poorly defined, broken and essentially absent. Orbicular and reniform spots each very weakly defined by a very narrow nearly circular black ring; claviform spot a short and narrow black dash. Postmedial area with mottled blackish, brown, and paler scales; narrow irregular black postmedian band terminating in a black spot at the costa. A broad horizontal black dash extends across the middle of the wing from the outer edge of the antemedial band to the

¹Research Associate: McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, University of Florida, Gainesville, FL; C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Ft. Collins, CO; Florida State Collection of Arthropods, Gainesville, FL.



FIGS. 1–2. **1**, *Bryolymnia semifascia*, AZ, Cochise Co., Huachuca Mts., Ash Canyon, 5170' (1577m), 25.vi.2005; **2**, *B. viridimedia*, same locality, 6.vii.1982.

FIGS. 3–5. *B. semifascia* male genitalia: **3**, genitalia with aedeagus removed; **4**, aedeagus; **5**, aedeagus with vesica everted.

FIGS. 6–7. *B. anthracitaria*: **6**, male holotype and pin labels, AZ, Cochise Co., Huachuca Mts., Ash Canyon, 5170' (1577m), 10–15 July, 2006; **7**, female paratype, same locality, 1.vii.1992.

FIGS. 8–11. *B. anthracitaria* genitalia: **8**, male genitalia with aedeagus removed; **9**, aedeagus; **10**, aedeagus with vesica everted; **11**, female genitalia.

FIGS. 12–13. Habitat photos: **12**, Type locality; **13**, Ash Canyon with Miller Peak in center distance, looking west. *Arctostaphylos pungens* Humboldt, Bonpland, Knuth (Manzanita) is in the foreground; the larger trees are *Quercus emoryi* Torrey (Emory oak).

subterminal line. The subterminal line is narrow, even and brown; the broad adterminal line is segmented with alternating black and whitish patches merging with the terminal line; the fringe is brown. There is a narrow irregular black apical patch. Ventrally the ground color is brownish-fuscous with a central horizontal long dash; the apical patch is weakly repeated. **Hindwing:** Fuscous basad and centrad shading to brown at the margin; fringe scales pale-tipped, brown basally; discal spot poorly defined and postmedial line absent. Ventrally the ground color is fuscous, paler than in the forewing; the discal spot is weakly defined and a partially-defined postmedial line extends from the costa to about mid-wing. **Genitalia** (Figs. 8–10) [2 dissections]: Costa of valve widely sclerotized, terminating in a broad pointed tip; corona absent; sacculus moderately sclerotized with slender elongate extension appressed to valve; clasper a broad wedge-shaped plate, rounded distally; saccus produced and narrowing to a rounded pointed tip; juxta trapezoidal and deeply incised; uncus narrow at base, expanding slightly in mid-region, then tapering to a sharply pointed tip, only slightly flattened laterally; prominent blunted triangular socii. Aedeagus sheath with elongated triangular sclerotized patch extending from about mid-length to apex; vesica broadly tubular then tapering beyond second cornutus; two unequal heavily sclerotized nearly flat broad cornuti each tapering to a sharp point, the larger distal cornutus about 4X the area of the smaller basal one. **FEMALE.** (Figs. 7, 11). Basically like the male in most respects except: antenna filiform; dorsal scale tuft on abdominal segment I reduced relative to male; forewing length (base to apex, $n = 5$): 14.0–16.0 mm, ave. 15.2 mm.; hindwing color brownish-fuscous, darker than in male. **Genitalia** (Fig. 11) [1 dissection]: Ovipositor lobes bluntly pointed, moderately setose; anterior and posterior apophyses of approximately equal length; ostium bursae conical with wide mouth, heavily sclerotized; ductus bursae heavily sclerotized, relatively short, expanding at junction with corpus bursae; corpus bursae long, oval, signum absent; very short appendix bursae arising from left posterior portion on corpus bursae, from which vary narrow ductus seminalis originates.

Holotype. Male: ARIZONA, Cochise Co., Huachuca Mts., Ash Canyon, 31° 23.27'N 110° 14.28'W, 5170' (1577m), 10–15 July, 2006, N. McFarland, deposited in National Museum of Natural History [USNM], Smithsonian Institution, Washington, DC.

Paratypes. (45m, 15f): ARIZONA, Cochise Co., same locality as Holotype, 23 June–4 August, C. D. Ferris, P. M. Jump, N. McFarland, R. Robertson (22m, 5f); Copper Canyon, 6000' (1830m), B. M. Walsh (1f); Pima/Santa Cruz cos., Madera Canyon, Santa Rita Mts., 4880–5880' (1488–1769m), 9–30 July, J. A. Comstock and L. M. Martin, J. G. Franclemont, B. M. Walsh (4m, 5f); Santa Cruz Co., Peña Blanca Canyon, 3950–4000' (1205–1220m), 14 July–23 August, J. C. Franclemont, B. M. Walsh (15m, 3f); Patagonia Mts., Harshav Creek, 5000' (1525m), 12–22 July, B. M. Walsh (4m); Atascosa Mts., Sycamore Canyon, 4 August, 1966, R. and J. Robertson (1f). Paratype depositories: Canadian National Collection of Insects and Arachnids, Ottawa, Ontario, Canada [CNC]; Essig Museum of Entomology, Univ. of California, Berkeley, CA [UCB]; Los Angeles County Museum of Natural History [LACM]; Cornell University, Ithaca, NY [CUIC]; private collections of C. D. Ferris, N. McFarland, B. M. Walsh.

Etymology. The specific epithet *anthracitaria* is derived from the Latin noun (*anthracites*) with the nominal adjective suffix *-aria* (like coal) to describe the jet black maculation of the moth's dorsal forewing and thorax.

Biology. Unknown. The habitat is desert mountain canyons in the ecotonal zone between the grassland and oak woodland (Figs. 12–13).

Distribution and Flight Period. To date, the moth is known only from Cochise, extreme southern Pima, and Santa Cruz counties in southeastern Arizona. In most years, adults first appear and reach a peak from

late June to early July during the last of the very hot and dry period before the onset of the monsoonal rains, but a few have also been collected well into August. Flight records span from 22 June to 23 August.

Discussion. Sixty-one specimens were examined, some by photograph. Collection years span from 1947 to 2006.

As noted from the forewing length measurements above, adults vary in size to some degree. In a few females, the dorsal hindwing color is very pale rather than brownish-fuscous. A few specimens manifest a rather pale postmedial ground color. In some individuals, the black horizontal dash extends basad and merges with the black basal patch.

Recently, specimens of a green *Bryolyminia* have been taken in Arizona (Mt. Graham, July, 2007) by B. M. Walsh and in New Mexico (Manzano Mts., late May–early July, 2006–2007) by R. Holland. These moths are considerably smaller than *B. viridimedia* with slightly different maculation. They resemble to some degree the Mexican *B. bicon* (Druce). Until specimens can be dissected and compared, it remains unclear if one or more species is involved, and if the moths are *B. bicon* or an undescribed species.

ACKNOWLEDGEMENTS

We express our appreciation to the following for supplying data, photographs, and loan material: J. D. Lafontaine, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada, and who also kindly reviewed the manuscript prior to submission; B. M. Walsh, Univ. of Arizona, Tucson, AZ; J. A. Powell, Essig Museum of Entomology, Univ. of California, Berkeley, CA; M. G. Pogue, Smithsonian Institution, Washington, DC.; L. Prevett, Bisbee, AZ. Two anonymous reviewers provided helpful suggestions.

LITERATURE CITED

- Poole, R. W. 1989. *Lepidopterorum Catalogus* (New Series), J. B. Heppner, Ed. Noctuidae, Part 1, Fascicle 118, E. J. Brill, Leiden. xii + 500 pp.
- Smith, J. B. 1900. A hundred new moths of the family Noctuidae. *Proc. U.S. Nat. Mus.* 22:413–495.
- _____. 1905. New species of Noctuidae for 1905. no. 3. *J. N. Y. Entomol. Soc.* 13:185–211.

Received for publication 21 May 2007; revised and accepted 29 June 2007